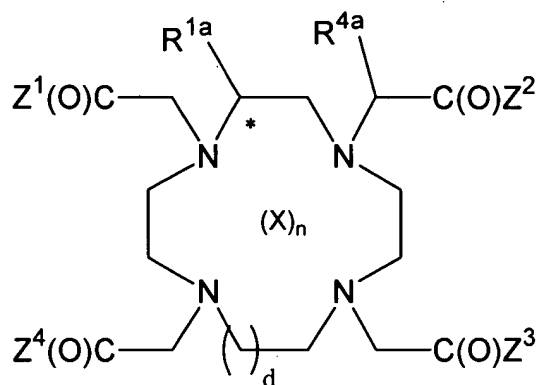


**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application.

**Listing of Claims:**

- 1    1.     (Currently amended) A method of ~~localizing an antibody-metal chelate complex to a~~  
2    ~~desired tissue by administering a macrocyclic metal chelate,~~ treating a subject with cancer by  
3    administration of a macrocyclic metal chelate, said method comprising the steps of:
  - 4           (a) administering to said subject an antibody comprising an antigen recognition domain  
5                 that recognizes said macrocyclic metal chelate, wherein said antibody comprises a  
6                 targeting moiety that binds specifically to a cancer cell by binding with a member  
7                 selected from a cell surface receptor and cell surface antigen, thereby forming a  
8                 cell-antibody complex; and
  - 9           (b) administering to said subject said macrocyclic metal chelate, thereby specifically  
10                 binding said macrocyclic metal chelate to said antibody to form a cell-antibody-  
11                 metal chelate complex;
- 12    wherein said macrocyclic metal chelate is substituted or unsubstituted DOTA  
13       ~~and~~  
14       ~~(c) detecting said cell-antibody-metal chelate complex.~~
- 1    2.     (Canceled).
- 1    3.     (Canceled).
- 1    4.     (Canceled).
- 1    5.     (Canceled).
- 1    6.     (Currently amended) The method of claim 1 ~~[[4]]~~, wherein said substituted or  
2    unsubstituted DOTA ~~macrocyclic metal chelate~~ has the formula:



wherein

R<sup>1a</sup> and R<sup>4a</sup> are members independently selected from H, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted aryl and linker moieties;

X is a member selected from a lanthanide, an actinide, an alkaline earth metal, a group IIIb transition metal, and a metal;

Z<sup>1</sup>, Z<sup>2</sup>, Z<sup>3</sup> and Z<sup>4</sup> are members independently selected from OR<sup>1</sup> and NR<sup>1</sup>R<sup>2</sup> in which

R<sup>1</sup> and R<sup>2</sup> are members independently selected from H, substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

n is a member selected from 0 and 1; and

d is a member selected from 1 and 2.

7. (Currently amended) The method of claim 1, wherein said substituted or unsubstituted DOTA macrocyclic metal-chelate comprises a reactive functional group.

8. (Previously presented) The method of claim 6, wherein the carbon atom marked \* is of S configuration.

9. (Cancelled)

10. (Previously presented) The method of claim 1, wherein said targeting moiety binds specifically to said cell surface antigen.

1 11. (Original) The method of claim 1, wherein the targeting moiety is covalently attached to  
2 said antibody.

1 12. (Original) The method of claim 10, wherein the targeting moiety is an antibody.

1 13. (Original) The method of claim 11, wherein the targeting moiety specifically binds to a  
2 protein on a cancer cell.

1 14. (Original) The method of claim 1, wherein the subject is a mammal.

1 15. (Previously presented) The method of claim 14, wherein the mammal is a human.

1 16. (Withdrawn) A method of *in vivo* imaging, said method comprising the steps of:

2 (a) administering to a subject an antibody comprising an antigen recognition domain that  
3 recognizes a macrocyclic metal chelate, wherein said antibody comprises a  
4 recognition moiety that binds specifically to a cell, thereby forming a cell-  
5 antibody complex;

6 (c) administering to said subject said metal chelate, thereby specifically binding said  
7 compound to said antibody to form a cell-antibody-metal chelate complex; and

8 (d) detecting said cell-antibody-metal chelate complex.

1 17. (Withdrawn) The method of claim 16, wherein said metal chelate comprises four  
2 nitrogen atoms.

1 18. (Withdrawn) The method of claim 16, wherein the step of detecting is by positron  
2 emission tomography.

1 19. (Withdrawn) The method of claim 16, wherein the step of detecting is by magnetic  
2 resonance imaging.

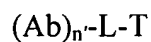
1 20. (Withdrawn) The method of claim 16, wherein the step of detecting is by detection of  
2 lanthanide luminescence.

1   **21.**   (Withdrawn) The method of claim **16**, further comprising, between steps (a) and (b),  
2   administering a clearing agent to said subject.

1   **22.**   (Withdrawn) The method of claim **16**, wherein the subject is a mammal.

1   **23.**   (Withdrawn) The method of claim **22**, wherein the mammal is a human.

1   **24.**   (Currently amended) The method according to claim **1** wherein said antibody has the  
2   structure:



4       wherein,

5           n' is an integer selected from 1 to 10 ;

6           Ab represents an antibody comprising an antigen recognition domain that  
7           recognizes a substituted or unsubstituted DOTA macrocyclic metal  
8           chelate;

9           L is a member selected from a chemical bond and a linking group that may  
10          contain one or more functional groups; and

11          T is said targeting moiety.

1   **25.**   (Canceled).

1   **26.**   (Previously presented) The method of claim **24**, wherein said targeting moiety is an  
2   antibody that binds specifically to a cell surface antigen.

1   **27.**   (Previously presented) The method according to claim **24** wherein said antibody is  
2   administered to said subject as a pharmaceutical composition comprising said antibody and a  
3   pharmaceutically acceptable carrier.

1   **28.**   (Canceled).

1   **29.**   (Canceled).

1   **30.**   (Previously presented) The method according to claim **1**; wherein said cell is a cancer  
2   cell.

1   **31.**   (Previously presented) The method according to claim **1**, wherein a disease is diagnosed  
2   due to said localizing.

1   **32.**   (Canceled).

1   **33.**   (Currently amended) The method according to claim **6** **[[32]]**, wherein  
2           said R<sup>1a</sup> and R<sup>4a</sup> are H;  
3           said Z<sup>1</sup>, Z<sup>2</sup>, Z<sup>3</sup> and Z<sup>4</sup> are OH;  
4           said d is 1; and said n is 1.

1   **34.**   (Currently amended) The method according to claim **33** **[[32]]**, wherein said targeting  
2   moiety is an antibody that binds specifically to a cell surface antigen.

1   **35.**   (Previously presented) The method according to claim **34**, wherein said targeting moiety  
2   is anti-CEA.

1   **36.**   (Previously presented) The method according to claim **33**, wherein said targeting moiety  
2   is anti-CEA.